REMARKS

The Office Action and the cited and applied reference have been carefully reviewed. No claim is allowed. Claims 3-12, 14, and 18 presently appear in this application (with claims 5, 6, 9, and 10 withdrawn by the examiner as being directed to non-elected species) and define patentable subject matter warranting their allowance. Reconsideration and allowance are hereby respectfully solicited.

Claims 4 and 8 are objected to as reciting non-elected species. This objection is requested to be held in abeyance until such time that allowable claims are present in the instant application. It is understood that upon allowance of a generic claim, applicants will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim.

Claims 4 and 7 are objected to because the examiner finds the recitation of actual amino acid sequences and the SEQ ID NOs in the claim to be redundant and to render the claims unclear. This objection is respectfully traversed.

While applicants agree that there is redundancy in reciting both the actual amino acid sequence and the corresponding SEQ ID NOs in the claims, this does not mean such redundancy renders the claims indefinite, as it is clear that the SEQ ID NOs are associated with specifically recited sequences. There is certainly no prohibition against reciting actual sequences in the claims.

Claims 1-3, 4, 7-8, 11-12, 14 and 18 have been rejected under 35 U.S.C. 112, first paragraph, because the examiner states that the specification, while being enabling for a synthetic peptide, said peptide consisting of the amino acid sequence set forth in SEQ ID NO:1 (pep2), said peptide having *in vitro* inhibitory effects on the following: (i) adhesion of activated T cells to fibronectin, laminin and collagen-type

IV, (ii) chemotactic migration of T cells through fibronectin; (iii) and spontaneous or TNF-α induced secretion of IL-8 or IL-1β from intestinal epithelial cells, does not reasonably provide enablement for "all" possible Il-2 derived synthetic peptides having inhibitory effects on the *in vitro* processes recited in claim 2, or "all" possible peptides that are obtained by replacement, addition or deletion of one or more natural or non-natural amino acid residues of peptide of SEQ ID NO:1, or chemical derivatives or cyclic derivatives or dual peptides of pep2, or multimers of said peptides, nor is the instant specification enabling for IL-2 derived peptides obtained by any of the limitations recited in claim 7 sub-parts a to m.

With respect to claims 4 and 7, the examiner states that applicants have not demonstrated that modifying the peptide of SEQ ID NO:1, by replacing, deleting, or adding one or more natural or non-natural amino acids would not alter the activity of the peptide of SEQ ID NO:1, neither have they shown that elongating peptide of SEQ ID NO:1 by up to 4 amino acid residues at the C and/or N terminal ends would not change the specific properties of the peptide of SEQ ID NO:1. The examiner further states that applicants contemplate that all possible peptide fragments derived from IL-2 would have anti-inflammatory activity and would inhibit at least one of the *in vitro* processes recited in claim, however, applicants fail to demonstrate that all of said peptides have the desired activities shown for the peptide of SEQ ID NO:1.

With respect to claim 4, the examiner also asserts that applicants have not delineated which residues of the peptide of SEQ ID NO:1 residues to be replaced or deleted, or where additions should be made, without affecting the functional integrity of the peptide of SEQ ID NO:1.

With respect to claim 11, it is the examiner's position that it would be undue experimentation for skilled artisan to test fragments

of IL-2 obtained from digestion with proteolytic enzymes, for *in vitro* ability to inhibit the adhesion of T cells with "all" possible ECM proteins, or chemotactic migration through "all" possible ECM proteins to "all" possible cytokine induced T cell proliferation or "all" possible cytokine secretion by cytokine. This rejection is respectfully traversed.

Claim 8 specifically recites and exemplifies derivatives of pep2 of SEQ ID NO:1. The table presented below shows what changes were made to pep2 to arrive at pep15-pep35.

pep2
Glu Phe Leu Asn Arg Trp Ile Thr

	Modification
pep15	Ile-Val added to N-terminus of pep2
pep16	Phe-Cys added to C-terminus of pep2
pep17	Ala-Thr-Ile-Val added to N-terminus of pep2
pep18	Phe-Cys-Gln-Ser added to C-terminus of pep2
pep19	Glu-Phe deleted from N-terminus of pep2
pep20	Glu-Phe-Leu-Asn deleted from N-terminus of pep2
pep21	Arg-Trp-Ile-Thr deleted from C-terminus of pep2
pep22	replacement of first residue of pep2
pep23	replacement of first residue of pep2
pep24	replacement of second residue of pep2
pep25	replacement of second residue of pep2
pep26	replacement of third residue of pep2
pep27	replacement of fourth residue of pep2
pep28	replacement of fifth residue of pep2
pep29	replacement of fifth residue of pep2
pep30	replacement of sixth residue of pep2
pep31	replacement of seventh residue of pep2
pep32	replacement of eighth (last) residue of pep2
pep33	chemical modification (amide moiety) at C-terminus of pep2
pep34	Cys added to N-terminus and Ala-Cys added to C-terminus of pep2
pep35	cyclization of pep34 above

The above representative derivatives of pep2 were tested for anti-inflammatory activity in Example 8, Table 1 on pages 28-31 of the specification. A level of inhibition of about 30% or higher is disclosed on page 28 as indicating that a peptide has relevant anti-inflammatory activity. As can be seen from Table 1, the pep15-pep35 peptide

derivatives of pep2 all have anti-inflammatory activity. It should be pointed out that not every possible peptide derivative encompassed by the possible modifications to pep2 may be anti-inflammatory, but this is not what is being claimed. By reciting that the synthetic peptides must be functional, i.e., anti-inflammatory, and in view of the teachings in the specification (see pages 10-16, Example 8, Table 1) of the type (addition, deletion, and substitutions, etc.) and location of modifications to pep2 as exemplified by the peptide derivatives shown in the above table, one of skill in the art is fully enabled for the scope of the invention claimed.

Reconsideration and withdrawal of the rejection are therefore respectfully requested.

Claims 1-4, 7, 8, 11-12, 14, and 18 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. This rejection is respectfully traversed.

Claim 4 (iv) is amended to recite one amino acid replacement. With regard to claim 4 (ii), the pep2 peptide recited in (ii) is 8 amino acids in length. It is clear to one of skill in the art that even though an upper limit of deleted residues is not recited, this upper limit cannot be more than 7 and would be less than 5 or 6 in order for the peptide to be anti-inflammatory. Thus, one of skill in the art would well recognize the range of deletions encompassed by claim 4 (ii) and therefore the claim is not rendered indefinite.

For claim 4 (iii), the upper limit is not particularly relevant as such peptides are required to be anti-inflammatory like pep1, pep2, or pep3. The present specification at page 10, lines 17-21, provides numerous examples of the peptide recited in claim 4 (iii).

Claim 4 (vii) is not indefinite because it is recited that there are only two peptides from (i) to (vii), which can be the same or different peptides, that are linked together either directly or through a

spacer. Accordingly, it is clear that there consists of only two peptides which may be joined by a spacer.

Claim 7(a) is modified to recite that there is a total of up to 4 additional residues that can be added, whether it is to one or both termini ends, thereby obviating this part of the rejection.

On the matter of reciting pep2 in claims 4, 7, and 8, there need be no antecedent basis as the peptide pep2 is specifically defined for the first time in claim 4 by a specific amino acid sequence and SEQ ID NO. Claims 7 and 8 ultimately depend from claim 4 and therefore there is nothing indefinite about the recitation of pep2.

The remaining issues in this rejection are obviated by the amendments to the claims.

Reconsideration and withdrawal of the rejection are therefore respectfully requested.

Claims 1 and 18 have been rejected under 35 U.S.C. §102(b) as being anticipated by Ivanov et al. (WO 95/00538).

Claim 1 is cancelled and claim 18 is amended to be dependent from claim 3, thereby obviating this rejection.

In view of the above, the claims comply with 35 U.S.C. §112 and define patentable subject matter warranting their allowance. Favorable consideration and early allowance are earnestly urged.

Respectfully submitted,

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